

# Linting Rules

## Introduction

In the Play+ ecosystem, we believe the codebase is a user interface for developers. It must be as intuitive, clean, and predictable as the products we ship. This guide is based on the concept of codified quality standards .

Our linting setup is essential for creating a frictionless and efficient development experience by automatically enforcing a consistent style and flagging potential issues early. This directly supports our core design pillars: making our codebase Distinct through uniform style, Intuitive by clarifying intent and reducing cognitive load, and Inclusive by baking in accessibility checks from the first line of code.

## Package Info

The Play+ linting configuration is provided as a development dependency and is pre-installed in all Golden Path starter kits.

Description	Package / Path
Golden Path (Recommended)	Pre-installed as a devDependency
Uplift Path	npm install --save-dev @playplus/eslint-config

## Folder Reference

The linting setup relies on a few key configuration files at the root of your project.

File / Directory	Purpose & Guidelines
.eslintrc.js	The main ESLint configuration file. It extends the base @playplus/eslint-config.
.prettierrc	Configuration file for Prettier, ensuring consistent code formatting.

File / Directory	Purpose & Guidelines
package.json	Defines the playlint script and lists the dev dependencies.
reports/	The git-ignored directory where automated linting reports are saved.

## Helper - Pillars Alignment

Our automated linting strategy is a direct implementation of our core design pillars, applied to the code itself.

Pillar	How This Helper Aligns
Distinct	Enforces a uniform coding style and naming convention, creating a recognizable brand identity at the code level.
Intuitive	Codifies best practices to reduce cognitive load, making code easier to read, reason about, and maintain.
Inclusive	Integrates accessibility (a11y) checks directly into the linter, ensuring products are built for everyone from the start.

## Helper Overview

Unlike other helpers that provide runtime APIs, the Play+ linting setup is a zero-configuration toolchain . It's delivered as an ESLint configuration package (@playplus/eslint-config) and a set of pre-configured scripts. Its purpose is to abstract the plumbing of setting up and maintaining a modern linting environment.

It automates quality control across the development lifecycle:

- During Development : Provides real-time feedback in your IDE.
- On Commit : A pre-commit hook automatically checks and fixes staged files, blocking critical issues.

- In Continuous Integration : A playlint script runs on every pull request, failing the build if errors are present to protect the main branch.

This system ensures that every developer on every team adheres to the same high standards of quality, security, and accessibility without needing to configure anything themselves.

## Config Options

While the setup is designed to be zero-config, you can override specific rules in your project's `.eslintrc.js` file. This should be done sparingly and with team consensus.

Config File	Action	Example
<code>.eslintrc.js</code>	Override a rule	<code>rules: { 'no-console': ['off', { allow: ['warn', 'error'] }] }</code>
<code>.eslintrc.js</code>	Extend configuration	<code>extends: ['@playplus/eslint-config', 'plugin:my-plugin/recommended']</code>

Example `.eslintrc.js`:

## Key Scripts & Commands

The functionality is exposed through npm scripts defined in your `package.json`.

Script Name	What It Does	Default Command
<code>playlint</code>	Runs the ESLint checker across all relevant source files in the project.	<code>eslint .</code>
<code>playlint :fix</code>	Runs ESLint with auto-fix enabled to automatically resolve fixable issues.	<code>eslint . --fix</code>

Script Name	What It Does	Default Command
playlint :report	Runs the linter and generates a machine-readable JSON report in the reports/ directory.	eslint . --format json --output-file reports/lint-report.json
playlint:report :html	Generates a comprehensive HTML report with visual analytics and filtering.	Custom script that processes JSON and creates HTML
format	Formats all code using Prettier.	prettier --write .
format :check	Checks formatting without making changes.	prettier --check .

## Usage Examples

### React & Angular: Automated Enforcement

For both frameworks, the Golden Path provides complete automation. There is nothing to set up.

- In your IDE : With the recommended extensions (ESLint/Prettier), you get real-time feedback as you type.
- When you commit : A pre-commit hook (via Husky) automatically lints your changes.
- When you create a Pull Request : A GitHub Action runs `npm run playlint` , ensuring no errors can be merged.

### VS Code IDE Setup

To get the best real-time experience, create a `.vscode/settings.json` file with the following content:

### Live Dashboard Component

The linting report dashboard is available as a component in your application:

# Static HTML Reports

Generate static HTML reports using npm scripts:

## Additional Info

## Why We Built This

Configuring a modern linting toolchain is complex. It involves selecting and integrating multiple tools (ESLint, Prettier), plugins (for React, Angular, a11y, security), and defining hundreds of rules. Without a centralized solution, each team would waste time on setup and debates, leading to inconsistencies across projects.

The `@playplus/eslint-config` package solves this by providing a single, opinionated, and production-ready configuration. It eliminates boilerplate and configuration drift, ensuring every project starts with and maintains the same high-quality bar.

## Best Practices

- Trust the Automation : Let the pre-commit hooks and CI checks do their job.
- Use Disables Sparingly : Only use `// eslint-disable-next-line` for true edge cases and always add a comment explaining why it's necessary.
- Integrate Your IDE : A properly configured IDE gives you the fastest feedback loop.
- Review Reports : Periodically check the generated `lint-report.json` to identify recurring patterns or areas for team-wide improvement.

## Developer Checklist

- Have I installed the recommended ESLint and Prettier extensions for my IDE?
- Is my IDE configured for format-on-save and fix-on-save?
- When I need to disable a rule, have I added a clear, explanatory comment?
- Am I letting the CI/CD pipeline validate my code quality before merging?

## Linting Standards & Rule Coverage

The `@playplus/eslint-config` package enforces a comprehensive set of rules by default. The following standards are automatically applied to all projects to ensure consistency, quality, and safety. While these rules can be toggled by developers in their local configuration, it is not advised as it creates divergence from the Play+ standard.

# Code Quality

Key (Rule)	Default Value	Description
prefer-const	error	Requires const declarations for variables that are never reassigned.
no-var	error	Disallows the use of var in favor of let and const.
prefer-arrow-callback	error	Enforces the use of arrow functions for callbacks.
no-unused-vars	warn	Flags variables that are declared but never used.
complexity	['error', 10]	Limits cyclomatic complexity to prevent overly complex functions.
import/order	error	Enforces a consistent and logical order for import statements.
eql	error	Requires the use of strict equality operators === and !==.
prefer-template	error	Enforces the use of template literals instead of string concatenation.
no-throw-literal	error	Restricts what can be thrown as an exception, requiring Error objects.
no-eval	error	Disallows the use of the eval() function to prevent security risks.

Key (Rule)	Default Value	Description
max-depth	['warn', 4]	Warns when code is nested too deeply.
unused-imports/no-unused-imports	warn	Flags unused import statements that can be safely removed.

## Accessibility

Key (Rule)	Default Value	Description
jsx-a11y/alt-text	error	Enforces that all <img> elements have meaningful alt text.
jsx-a11y/label-has-associated-control	error	Requires that every form label is associated with a form control.
jsx-a11y/aria-props	error	Enforces that only valid ARIA props are used.
jsx-a11y/click-events-have-key-events	error	Requires a keyboard event handler for elements with a click event.
jsx-a11y/no-redundant-roles	error	Prevents the use of ARIA roles on elements that have implicit roles.

## Security

Key (Rule)	Default Value	Description
react/no-danger	warn	Warns against the use of dangerouslySetInnerHTML.
react/jsx-no-target-blank	error	Enforces rel="noreferrer" on links with target="_blank".

Key (Rule)	Default Value	Description
security/detect-unsafe-regex	warn	Detects regular expressions that are susceptible to ReDoS attacks.
security/detect-child-processes	warn	Flags the use of <code>child_process</code> which can be a security risk.

## Framework: React

Key (Rule)	Default Value	Description
react-hooks/rules-of-hooks	error	Enforces the Rules of Hooks to prevent common mistakes.
react-hooks/exhaustive-deps	warn	Verifies dependency arrays in hooks like <code>useEffect</code> and <code>useCallback</code> .
react/no-direct-mutation-state	error	Prevents direct mutation of <code>this.state</code> ; <code>setState</code> must be used.
react/jsx-key	error	Requires a unique key prop for elements in an array or iterator.

## Framework: Angular

Key (Rule)	Default Value	Description
@angular-eslint/component-selector	error	Enforces a consistent prefix for component selectors (e.g., <code>app-</code> ).
@angular-eslint/no-empty-lifecycle-method	warn	Flags empty lifecycle methods that can be removed.

Key (Rule)	Default Value	Description
@angular-eslint/template/accessibility-alt-text	error	Enforces alt text on <img> elements inside Angular templates.

## Formatting

Key (Rule)	Default Value	Description
prettier/prettier	error	Runs Prettier as an ESLint rule and reports differences as errors.

## Report Features

### Modern UI Dashboard

- Beautiful, responsive design with gradient headers
- Interactive filtering by severity, category, and search
- Real-time statistics and charts
- Auto-fix functionality for fixable issues
- Export capabilities

### Comprehensive Statistics

- Total issues count
- Breakdown by severity (errors, warnings, info)
- Auto-fixable issues count
- Category-based analysis
- Top rule violations

### Advanced Filtering

- Filter by severity level
- Filter by category (security, quality, style, accessibility, performance)
- Search across files, rules, and messages
- Sort by multiple criteria

### Visual Analytics

- Bar charts for category distribution
- Top rules analysis
- Interactive charts with hover effects
- Color-coded severity indicators

## **Integration**

### **With CI/CD**

Add to your CI pipeline:

### **With IDE**

Configure your IDE to use the generated reports:

## **Troubleshooting**

### **Common Issues**

- Import ordering errors Run `npm run playwright:fix` to auto-organize imports
- Prettier conflicts Run `npm run format` to fix formatting issues
- Unused imports Run `npm run playwright:fix` to remove unused imports
- Complexity warnings Break down complex functions into smaller ones

### **Rule Overrides**

If you need to override a rule (use sparingly):

## **Monitoring & Metrics**

### **Key Metrics to Track**

- Number of linting errors per PR
- Time to fix linting issues
- Most common rule violations
- Auto-fix success rate

## **Report Analysis**